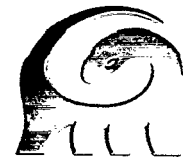


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ENVIRONMENTAL

Subject:
**Habitat Impact Analysis and Environmental Restoration Plan
Landfill Cover System
Woodlawn Landfill Site, Cecil County, Maryland
Administrative Order, EPA Docket No. III 95-05-DC**

Dear Ms. Rossi:

Enclosed for your review, please find 2 copies of the document entitled "Habitat Impact Analysis and Environmental Restoration Plan Landfill Cover System Woodlawn Landfill Site, Cecil County, Maryland". ARCADIS Geraghty & Miller has prepared this document on behalf of Bridgestone/Firestone, Inc. in accordance with the requirements set forth in the above order and in response to Agency comments in USEPA's May 27, 1998 letter. If you have any questions or should you require additional information, please call.

Langhorne,
25 June 1998

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Cristina Stack

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Sincerely,

ARCADIS Geraghty & Miller Inc.

Cristina Stack
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Project Manager

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Mr. Joseph Lewandowski, ERM

Our ref.:
g:project/bridgeston/reports/restorat/cvrltr2.doc

AR312293

**HABITAT IMPACT ANALYSIS AND ENVIRONMENTAL RESTORATION PLAN
FEBRUARY 24, 1998**

EPA and USFWS May 27, 1998 Comments

1. Page 3-3, Section 3.1.3: The operational period of the cap shall not be limited to "30 years or less." Please delete the parenthetical phrase in the first paragraph.

Section 3.1.3 has been revised to address this comment.

2. Page 3-5, Section 3.2.2: The second paragraph refers to "the Phase I EAA." Please explain if not previously defined in the report.

Section 3.2.2 and other appropriate section of this report have been revised to address this comment.

3. Page 3-7, Section 3.2.4: This section states that the results of the baseline studies performed by Harding Lawson Associates (HLA) show that "the ecosystem of the stream is healthy and measured no deleterious effects associated with the Site." Please revise this statement. As we stated in our comments on the draft document, the baseline surveys were intended to establish conditions in the stream prior to remedial action and not to determine ecological risk. During the remedial investigation, an ecological risk assessment determined that the landfill and contaminated ground water could impact the stream adversely.

While the HLA study did show that benthic macroinvertebrates were using the stream, no bioassays or fisheries surveys have been performed at the site. Benthic macroinvertebrate surveys are one of many useful tools used to estimate ecological risk. However, conclusions concerning the ecological conditions in a stream should not be based exclusively on benthic results. It is also true that sediment contaminants were not detected during the HLA study at levels that cause concern. However, sediments sampled for chemical analysis were found to be coarse textured during grain size analysis. The highest percentage of fines (silt-clay) in any sample was 17%. In general, sediments collected for chemical analysis should contain at least 30% fines in order to accurately assess contaminant inputs to the aquatic environment.

The appropriate sections of this report have been revised to address this comment.

As discussed in our revision and detailed in the *Phase I, Task 2 Technical Memorandum, Baseline Stream Sampling, Woodlawn Landfill Site, Cecil County, Maryland* (HLA, 1996), in order to characterize sediments in the stream to support baseline survey activities, HLA made an extraordinary effort to collect sediment samples from visually identified deposition areas at each of the seven baseline sediment sampling locations. This upper perennial stream system has a substrate dominated by cobbles and gravel with some areas of

exposed bedrock. Areas of finer grained deposits are not common to upper perennial streams, were not common in the samples collected despite HLA's efforts, and are not typical of the cobble gravel stream bottom in the unnamed stream. The percentages of silt and clay present in the sediments were much greater at MS-4 (baseline sampling station SA-5) than at other locations on the unnamed stream (HLA 1996). This sample was collected from a backwater pool which collected some fine sediments but was not typical of the stream substrate. Even in this area, the fine sediments were only a few centimeters thick.

4. Page 3-8, Section 3.2.4: In the previous draft of this document, this section contained a bullet that noted that there would be a direct loss of natural buffer function as a result of the destruction of existing upland forests and wetlands. Based on the information presented in the current draft, this statement remains true and should be included in this section.

Section 3.2.5 of the report has been revised to include this statement.

5. Page 3-10, Section 3.4, fourth paragraph: It is unlikely that the sediment and debris dam constitutes a complete barrier to anadromous fish as evidenced by the occurrence of American Eel upstream of the barrier. Please revise the text. In addition, the HLA studies do not support the conclusion in the final sentence of the fourth paragraph (see comment 3). Please revise.

In response to this comment, the baseline investigations reviewed and the text in section 3.4 has been revised. On numerous occasions, the debris dam on the upstream side of the four 48-inch culverts installed under the railroad grade was observed to completely cover three of the four culverts and channeled the surface stream flow into the top few inches of the remaining culvert. Based on these observations, the revised text reads "This debris dam may have some impact on the number and types of anadromous fish species utilizing the unnamed stream above that location. We have revised the text to address the issues raised in the third sentence of this comment as requested. However we believe that the data quantity, collection methods, quality control and analysis utilized by HLA establish the HLA data as more valuable than those collected by IT when considering potential risks to the stream.

6. Page 3-11, Section 3.4, Potential Impacts: The third paragraph states that cover system construction will result in the displacement and loss of wildlife species "which may presently use the herbaceous range habitat within the cover footprint and the habitats immediately adjacent to the cover boundary." This paragraph should mention the loss of wildlife using forest habitat within the cover footprint in addition to the loss of wildlife using herbaceous range habitat.

This section and other appropriate sections of this report have been revised to address this comment.

7. Page 4-4, Section 4.3.1.2: This section references a USFWS seed mixture (Table 5) that has been recommended for some landfill caps. The mixture contains herbaceous species that provide food and habitat for wildlife, but it has not yet been proven to control erosion on steep slopes. Since most of the Woodlawn Landfill cover slopes will be steep, this mix is not recommended at the site. Please make this section of the document consistent with the seeding specification in the Final Design Report. USFWS suggests that invasive species such as reed canary grass (Final Design Report, Table 02936-2, permanent seeding mix #9) not be used at the site.

The appropriate text and Table 5 have been revised to include the erosion control seed mixtures and procedures presented in the Final Design Report.

8. Page 4-4, Section 4.4: This section states that a total of 0.25 acres of wetlands will be created in the retention basin and capture trenches. According to section 3.1.2, the stormwater retention basin will be approximately 0.75 acres in area. Although only 0.2 acres of wetland will be impacted by remedial measures, a total of 22.3 acres of upland habitat will be destroyed. Because of the extensive upland habitat losses, consideration should be given to restoring habitat in the entire 0.75 acre basin. If the extent of wetland plantings is limited by hydrological constraints, consideration should be given to planting facultative wetland and facultative upland herbaceous, shrub, and tree species in the structure. Planting of non-wetland species should be accomplished using procedures listed in section 4.3.1.3, which describes the restoration of disturbed areas outside the cover footprint. If additional planting cannot be done because storm water control efficiency will be reduced, a statement to that effect should be included in section 4.4.

As shown in the basin wetland design (Figure 7), the majority of the drainage basin has slopes in excess of 10%. Because of the erosion concerns associated with these steep slopes the vegetation options are limited to fast growing soil stabilizing grasses. Section 4.3.1.3 of the text have been revised to include discussion of these design considerations. This revision includes a more diverse planting plan for the small area of generally level disturbed upland areas on the rim of the basin.

9. Page 4-7, Section 4.5, Monitoring and Maintenance Program - The first paragraph of this section states that water, sediment, and benthic macroinvertebrate sampling will be performed at least twice (once during and once following construction) to evaluate potential impacts of the cover system on the unnamed stream. Performance Standard G in the Record of Decision (ROD) requires that biological monitoring of aquatic macroinvertebrates "be conducted twice a year for the first year of post-construction monitoring and once a year thereafter." Please ensure that the description of the monitoring program is consistent with the requirements of the ROD.

Sections 4.5 and 4.5.5 of the report have been revised as requested.

10. Page 4-8, Section 4.5: This page contains several bullets that describe how the Monitoring and Maintenance section is organized. There is also a statement in the bullet for Section 4.5.1 that wetland monitoring was described earlier in the document. Wetland monitoring is actually described in Section 4.5.4, which follows Section 4.5.1 Several of the bullets do not correspond to the actual sections that they reference. Please correct these discrepancies.

The appropriate sections of the report have been revised to address this comment.

11. Page 4-8, Section 4.5.1: This section is vague as to how and where visual inspections of vegetation and wildlife species composition will be performed. What phyla will be monitored? Which sampling methods will be employed? The "watch" sites should consist of transects through the habitat parcels along which observations are made and vegetation and wildlife sampling are performed. Please provide additional detail as indicated. In addition, the definition of a "consequential change" should not be limited to alterations "caused by the landfill and creating or likely to create problems which require a response action." Any observed destruction or degradation of habitat should be considered a "consequential change."

Habitat monitoring is now addressed in Section 4.5.2. Section 4.5.2 and other appropriate sections have been revised to address this comment and provide more detail on the habitat monitoring program.

12. Page 4-10, Section 4.5.2.1: This section states that surface water and sediment samples will be collected from seven sampling stations, with no mention of where the stations are located. Please include a figure showing the proposed sampling locations and a description of exactly where the samples will be collected, such as was provided in the baseline stream sampling reports. Please identify analytical parameters for sediments, consistent with Performance Standard G in the ROD (grain size, etc.). Please include flow rate as a parameter to be measured in surface water as required by the ROD.

The text and figures have been revised to address this comment.

13. Page 4-10, Section 4.5.2.2: Please ensure that this section is consistent with the requirements of the ROD with respect to sampling frequency and with section 4.5.2.1 with regard to the number and location of stream sampling locations. In order to facilitate comparisons to baseline conditions, several stations sampled during the HLA baseline study should be sampled during post-construction monitoring. At a minimum, in addition to an upstream station (baseline station SA-1 or SA-2), baseline stations SA-3, SA-4, SA-5 and SA-6 should be monitored during the post-construction monitoring period. As in the baseline study, MDNR Station 2 on Basin Run should serve as a reference station.

The figures and text has been revised to address these comments.

14. Page 4-11, Section 4.5.4, Wetland Monitoring and Maintenance: This section states that a detailed wetland monitoring checklist will be included in the Draft Final Design Report. The detailed checklist should be included in this section of the Environmental Restoration Plan as well. Because this document focuses on habitat impacts and restoration, it is imperative that detailed monitoring plans be included in the text. In addition to visual monitoring, vegetative survey methods should also be employed. At a minimum, several permanent transects should be established in the wetland and surveyed to estimate percent species coverage using appropriate methods.

The figures and appropriate sections of the text have been revised to address these comments. In addition we have added the Visual Inspection Checklist as Table 7 to this report. Transects have been established in the wetland, and they will be surveyed.

15. The last sentence of this section states that *Phragmites* will be removed if found in quantity. Please specify the percent *Phragmites* coverage that will trigger eradication activities. USFWS recommends an eradication trigger value of 3 percent *Phragmites* cover for this site.

Section 4.5.5.1 of the report has been revised to address this comment.

16. Page 4-12, Section 4.5.5: This section states that surface water and sediment samples will be collected on the same schedule as the ground water monitoring plan for the monitored natural attenuation. Please include the sampling schedule and analytical parameters in the HIA/ERP. EPA recommends that surface water and sediment samples be collected and analyzed for the parameters specified in the ROD on a quarterly basis during the first year after construction of the cap and annually thereafter, unless otherwise indicated. Surface water and sediment sampling should be scheduled to coincide with the annual benthic macroinvertebrate survey.

Section 4.5.6 of the text has been revised to reflect a new habitat sampling schedule. This schedule includes one full round of surface water, sediment and benthic macroinvertebrate monitoring samples near the midpoint of Cover construction; two full rounds of samples to take place during the first year after completion of the Cover; and one full round of samples annually thereafter.

The analytical parameters for the monitoring samples have been revised in the appropriate sections of the report have been revised to address EPA's earlier comments.

17. Page 4-13, Section 4.5.5, Stormwater Discharge Sampling: Please make this section consistent with section 4.5.3 which states that baseline samples from the stormwater discharge will be collected and analyzed for selected parameters.

Section 4.5.6.3 of the report has been revised to address this comment.

18. Page 4-13, Section 4.5.6: This section states that a "Contingency/Response Program" will be included in the Construction Management Plan and the O&M Plan. The response program will presumably outline corrective measures to be initiated in the event that habitats are destroyed or degraded. Since one of the major focuses of this document is to describe procedures to limit and correct impacts to habitat, the response program should be included in this section of the HIA/ERP in its entirety.

Section 4.5.7 includes a Contingency/Response Program to provide more detailed response procedures. This Contingency/Response Program does not include specific responses for each possible impact. As discussed in the text, it is not possible to effectively predict details of all of the potential impacts anticipated over time and develop contingency plans for all possible situations. The foundation of the Contingency/Response Program is the Habitat Monitoring Program and the subsequent review of monitoring results by the appropriate personnel and established notification procedures designed to mobilize the appropriate personnel if an impact is identified.

Responses procedures to engineering concerns, particularly erosion and cover performance standards are detailed in the Final Design Report (ARCADIS Geraghty & Miller, 1998). Names and phone numbers of the appropriate Contingency Response Team members and the specific notification procedures will be developed and submitted for approval once the Cover design has been approved and construction, management and monitoring personnel have been retained or assigned to the project.